AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) A polymeric material comprising a smart segment and a biodegradable segment, wherein the biodegradable segment includes a hydrophobic segment and a hydrophilic segment.

2. (Original) The polymeric material of claim 1 wherein the hydrophobic or hydrophilic segment is hydrolytically or enzymatically degradable.

3. (Currently Amended) The polymeric material of claim 2 wherein the smart segment comprises poly(N-isopropylacrylamide), poly(N-alkylacrylamide), poly(N-n-propylacrylamide), poly(N-isopropylmethacrylamide), poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide), or elastin-like polypeptides~~, or a derivative thereof~~.

4. (Currently Amended) The polymeric material of claim 2 wherein the hydrophobic segment comprises a polyester, polylactide, poly(L-lactic acid), poly(D,L-lactic acid), poly(lactide-co-glycolides), biotinylated poly(ethylene glycol-block-lactic acid), poly(alkylcyanoacrylate), poly(epsilon-caprolactone), polyanhydride, poly(bis(p-carboxyphenoxy) propane-sebacic acid), polyorthoester, polyphosphoester, polyphosphazene, polyurethane, or poly(amino acid)~~, or a derivative thereof~~.

5. (Currently Amended) The polymeric material of claim 2 wherein the hydrophilic segment comprises a polysaccharide, or dextran~~, or a derivative thereof~~..

6. (Original) The polymeric material of claim 1 having a hydrogel structure.

7. (Withdrawn) The polymeric material of claim 1 having a dendritic structure.

8. (Original) The polymeric material of claim 1 having a nanoparticle, nanosphere, nanoshell, micelle, core-shell, multi-core shell, multi-layered, nanogel, microparticle, microsphere, microgel, block, branched, hyperbranched, hybrid, tree-like, comb-like, brush, grafting, vesicle, coil, global, coil-coil, coil-global, rod, membrane, film, coating, self-assembly, cyclic, , microconduit, microchannel, nanochannel, porous, nonporous, tube, microtube, nanotube, semi-interpenetrating network, cross-linked, or a highly networked structure.

9. (Original) The polymeric material of claim 1 wherein the smart segment is responsive to physical, chemical, or biological stimuli.

10. (Withdrawn) A hydrogel material comprising a smart segment and a biodegradable segment, wherein the biodegradable segment comprises dextran, polylactic acid, or derivatives thereof.

11. (Withdrawn) The hydrogel material of claim 10 comprising approximately 40% to 99% molarity of poly(N-isopropylacrylamide) as the smart segment and approximately 1% to 40 % molarity of polylactic acid and approximately 0% to 59 % molarity of dextran as the biodegradable segment.

12. (Withdrawn) The hydrogel material of claim 10 further comprising anionic or cationic units.

13. (Withdrawn) A dendrimer comprising a poly(N-isopropylacrylamide) segment or derivative thereof, a poly(lysine) segment or derivative thereof, and a poly(lactic acid) segment or derivative thereof.

14. (Withdrawn) The dendrimer of claim 13, wherein the poly(N-isopropylacrylamide) segment or derivative thereof has a number average molar mass of between about 1000 and about 600,000 $g \cdot mol^{-1}$, the poly(lysine) segment or derivative thereof has a number average molar mass of between about 150 and about 600,000 $g \cdot mol^{-1}$, and the poly(lactic

acid) segment or derivative thereof has a number average molecular weight of between about 100 and about 600,000 $g \cdot mol^{-1}$.

15. (Withdrawn) The dendrimer of claim 14, wherein the poly(lysine) segment or derivative thereof is a poly(L-lysine) or derivative thereof and the poly(lactic acid) segment or derivative thereof is a poly(D,L-lactic acid) segment or a derivative thereof.

16. (Original) A pharmaceutical composition comprising the polymeric material of claim 1 and a substance.

17. (Original) The pharmaceutical composition of claim 16, wherein the substance is a biologically active substance.

18. (Original) The pharmaceutical composition of claim 16, wherein the biologically active substance comprises a protein, peptide, gene, enzyme, antibody, antibiotic, nucleic acid, DNA, RNA, receptor, hormone, vaccine or drug.

19. (Original) The pharmaceutical composition of claim 17, wherein the biologically active substance comprises interferon consensus, interleukin, erythropoietin, granulocyte-colony stimulating factor (GCSF), stem cell factor (SCI:), leptin (OB protein), interferon (alpha, beta, gamma), ciprofloxacin, amoxycillin, lactobacillus, cefotaxime, levofloxacin, cefipime, mebendazole, ampicillin, lactobacillus, cloxacillin, norfloxacin, tinidazole, cefpodoxime, proxctil, azithromycin, gatifloxacin, roxithromycin, cephalosporin, anti-thrombogenics, aspirin, ticlopidine, sulfinpyrazone, heparin, warfarin, growth factors, differentiation factors, hepatocyte stimulating factor, plasmacytoma growth factor, brain derived neurotrophic factor (BDNF), glial derived neurotrophic factor (GDNF), neurotrophic factor 3 (NT3), fibroblast growth factor (FGF), transforming growth factor (TGF), platelet transforming growth factor, milk growth factor, endothelial growth factors (EGF), endothelial cell-derived growth factors (ECDGF), alpha-endothelial growth factors, beta- endothelial growth factor, neurotrophic growth factor , nerve growth factor (NGF), vascular endothelial growth factor (VEGF), 4-1 BB receptor (4-1BBR), TRAIL (TNF-related apoptosis inducing ligand), artemin (GFRalpha3-RET ligand),

BCA-1 (B cell-attracting chemokine1), B lymphocyte chemoattractant (BLC), B cell maturation protein (BCMA), brain-derived neurotrophic factor (BDNF), bone growth factor such as osteoprotegerin (OPG), bone-derived growth factor, megakaryocyte derived growth factor (MGDF), keratinocyte growth factor (KGF), thrombopoietin, platelet-derived growth factor (PGDF), megakaryocyte derived growth factor (MGDF), keratinocyte growth factor (KGF), platelet-derived growth factor (PGDF), bone morphogenetic protein 2 (BMP2), BRAK, C-10, Cardiotrophin 1 (CT1), CCR8, anti-inflammatory: paracetamol, salsalate, diflunisal, mefenamic acid, diclofenac, piroxicam, ketoprofen, dipyrone, acetylsalicylic acid, antimicrobials amoxicillin, ampicillin, cephalosporins, erythromycin, tetracyclines, penicillins, trimethprim-sulfamethoxazole, quniolones, amoxicillin, clavulanatf,azithromycin, clarithromycin, anti-cancer drugs aliteretinoin, altertamine, anastrozole, azathioprine, bicalutamide, busulfan, capecitabine, carboplatin, cisplatin, cyclophosphamide, cytarabine, doxorubicin, epirubicin, etoposide, exemestane, vincristine, vinorelbine, hormones, thyroid stimulating hormone (TSH), sex hormone binding globulin (SHBG), prolactin, luteotropic hormone (LTH), lactogenic hormone, parathyroid hormone (PTH), melanin concentrating hormone (MCH), luteinizing hormone (LHb), growth hormone (HGH), follicle stimulating hormone (FSHb), haloperidol, indomethacin, doxorubicin, epirubicin, amphotericin B, Taxol, cyclophosphamide, cisplatin, methotrexate, pyrene, amphotericin B, anti-dyskinesia agents, Alzheimer vaccine, antiparkinson agents, ions, edetic acid, nutrients, glucocorticoids, heparin, anticoagulation agents, anti-virus agents, anti-HIV agents, polyamine, histamine and derivatives thereof, cystineamine and derivatives thereof, diphenhydramine and derivatives, orphenadrine and derivatives, muscarinic antagonist, phenoxybenzamine and derivatives thereof, protein A, streptavidin, amino acid, beta-galactosidase, methylene blue, protein kinases, beta-amyloid, lipopolysaccharides, eukaryotic initiation factor-4G, tumor necrosis factor (TNF), tumor necrosis factor-binding protein (TNF-bp), interleukin-1 (to 18) receptor antagonist (IL- Ira), granulocyte macrophage colony stimulating factor (GM-CSF), novel erythropoiesis stimulating protein (NESP), thrombopoietin, tissue plasminogen activator (TPA), urokinase, streptokinase, kallikrein, insulin, steroid, acetylsalicylic acid, acetaminophen, analgesic, anti-tumor preparation, anti-cancer preparation, anti-proliferative preparation or pro-apoptotic preparation.

20. (Original) A method of administering a composition to a subject in need thereof, the method comprising administering the pharmaceutical composition of claim 16 to the subject.

21. (Original) The method of claim 20, wherein the subject is human.

22. (Original) The method of claim 21, wherein the composition comprises a biologically active substance and the composition is administered wherein the biologically active substance has a concentration of up to approximately 1000 mg ml^{-1}.

23. (Original) A method of aqueously loading a biologically active substance, the method comprising combining the polymeric material of claim 1 with a biologically active substance in an aqueous medium to form a composition comprising the polymeric material and the biologically active substance.

24. (Original) The method of claim 23, comprising forming the composition wherein the biologically active substance comprises approximately 40 wt% of the composition.